AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

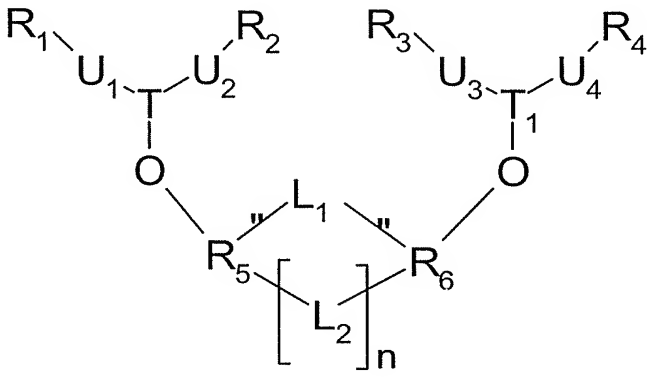
LISTING OF CLAIMS:

1. - 24. (Canceled)

25. (Currently Amended) A process for hydrocyanating a hydrocarbon compound containing at least one ethylenic unsaturation by reacting [[it]] said hydrocarbon in a liquid medium with hydrogen cyanide in the presence of a catalyst comprising a metallic element ~~selected from transition metals~~ and an organic ligand,

wherein the metallic element is selected from the group consisting of nickel, cobalt, iron, ruthenium, rhodium, palladium, osmium, iridium, platinum, copper, silver, gold, zinc, cadmium and mercury, and

the organic ligand corresponds to formula I below:



(I)

in which:

T and T_1 represent a phosphorus atom,

R_1, R_2, R_3 and R_4, which are identical or different, represent a substituted or unsubstituted aryl radical having one or more rings, which are in fused form or not, optionally having one or more heteroatoms,

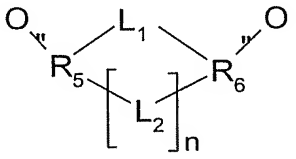
U_1, U_2, U_3 and U_4 represent an oxygen atom,

R_5 and R_6, which are identical or different, represent a substituted or unsubstituted aryl group,

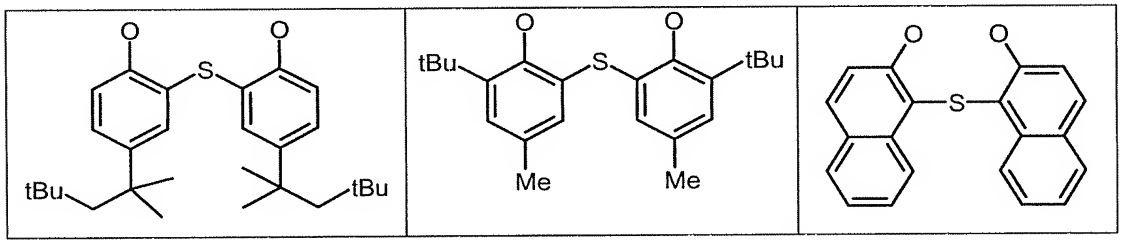
n is 0, and

L_1 is S.

26. (Currently Amended) The process according to Claim 25, wherein the ~~organic ligand of formula I presents a~~ structure:



in the organic ligand of formula I is selected from the group consisting of the following structures:



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27. (Cancelled)

28. (Cancelled)

29. (Previously Presented) The process according to Claim 25, wherein the reaction is carried out in a single-phase medium.

30. (Previously Presented) The process according to Claim 25, wherein the catalyst corresponds to the general formula (II):

$$M\,[L_f]_t \qquad (II)$$

in which

M is a transition metal,

L_f represents the organic ligand of formula (I) and

t represents a number between 1 and 4 (inclusive).

31. (Previously Presented) The process according to Claim 25, wherein the liquid medium further comprises a solvent for the catalyst which is miscible with a phase comprising the compound to be hydrocyanated at the hydrocyanation temperature.

32. (Previously Presented) The process according to Claim 25, wherein the transition metal compounds are nickel compounds in which nickel is in oxidation state zero, nickel carboxylates, carbonate, bicarbonate, borate, bromide, chloride, citrate, thiocyanate, cyanide, formate, hydroxide, hydrophosphite, phosphite, phosphate and derivatives, iodide, nitrate, sulphate, sulphite, arylsulphonates or alkylsulphonates.

33. (Previously Presented) The process according to Claim 25, wherein the hydrocarbon compound containing at least one ethylenic unsaturation is a diolefin, ethylenically unsaturated aliphatic nitrile, linear pentenenitrile, or monoolefin.

34. (Previously Presented) The process according to Claim 25, wherein the transition metal is used in a amount of between 10^{-4} and 1 mol of transition metal per mole of hydrocarbon compound and wherein the organic ligand of formula (I) is used in a number of moles of from 0.5 to 50 relative to 1 mol of transition metal.

35. (Previously Presented) The process according to Claim 25, wherein the hydrocyanation reaction is carried out at a temperature from 10°C to 200°C.

36. (Previously Presented) The process according to Claim 25 for hydrocyanating ethylenically unsaturated nitrile compounds to dinitriles, being operated in the presence of a catalyst system comprising at least one transition metal compound, at least one organic compound of formula (I) and a cocatalyst composed of at least one Lewis acid.

37. (Previously Presented) The process according to Claim 36, wherein the ethylenically unsaturated nitrile compounds are pent-3-enenitrile, pent-4-enenitrile or mixtures thereof.

38. (Currently Amended) The process according to Claim 37, wherein the ~~linear~~ pentenenitriles contain amounts of other compounds selected from the group

consisting of 2-methylbut-3-enenitrile, 2-methylbut-2-enenitrile, pent-2-enenitrile, valeronitrile, adiponitrile, 2-methyl-glutaronitrile, 2-ethylsuccinonitrile and butadiene.

39. (Previously Presented) The process according to Claim 36, wherein the Lewis acid is selected from compounds of the elements of groups Ib, IIb, IIIa, IIIb, IVa, IVb, Va, Vb, VIb, VIIb and VIII of the Periodic Table of the Elements.

40. (Previously Presented) The process according to Claim 36, wherein the Lewis acid is selected from salts selected from the group of halides, sulphates, sulphonates, haloalkylsulphonates, perhaloalkylsulphonates, haloalkylacetates, perhaloalkylacetates, carboxylates and phosphates.

41. (Previously Presented) The process according to Claim 36, wherein the Lewis acid is zinc chloride, zinc bromide, zinc iodide, manganese chloride, manganese bromide, cadmium chloride, cadmium bromide, stannous chloride, stannous bromide, stannous sulphate, stannous tartrate, indium trifluoromethylsulphonate, indium trifluoroacetate, zinc trifluoroacetate, lanthanum chloride, cerium chloride, praseodymium chloride, neodymium chloride, samarium chloride, europium chloride, gadolinium chloride, terbium chloride, dysprosium chloride, hafnium chloride, erbium chloride, thallium chloride, ytterbium chloride, lutetium chloride, lanthanum bromide, cerium bromide, praseodymium bromide, neodymium bromide, samarium bromide, europium bromide, gadolinium bromide, terbium bromide, dysprosium bromide, hafnium bromide, erbium bromide, thallium bromide, ytterbium bromide, lutetium bromide, cobalt chloride, ferrous chloride, or

yttrium chloride.

42. (Previously Presented) The process according to Claim 36, wherein the Lewis acid employed represents from 0.01 to 50 mol per mole of transition metal compound.

43. (Previously Presented) The process according to Claim 36, wherein 2-methylbut-3-enenitrile, present in the reaction mixture originating from butadiene hydrocyanation, is isomerized to pentenenitriles in the absence of hydrogen cyanide, in the presence of a catalyst comprising at least one organic ligand of general formula (I) and at least one transition metal compound.

44. (Previously Presented) The process according to Claim 43, wherein the 2-methylbut-3-enenitrile subjected to isomerization is employed alone or in a mixture with 2-methylbut-2-enenitrile, pent-4-enenitrile, pent-3-enenitrile, pent-2-enenitrile, butadiene, adiponitrile, 2-methylglutaronitrile, 2-ethylsuccinonitrile or valeronitrile.

45. (Previously Presented) The process according to Claim 43, wherein the isomerization reaction is carried out at a temperature from 10°C to 200°C.

46. (Previously Presented) The process according to Claim 43, wherein the isomerization of 2-methylbut-3-enenitrile to pentenenitriles is carried out in the presence of at least one transition metal compound, at least one organic phosphorous ligand of the formula (I) and a cocatalyst composed of at least one

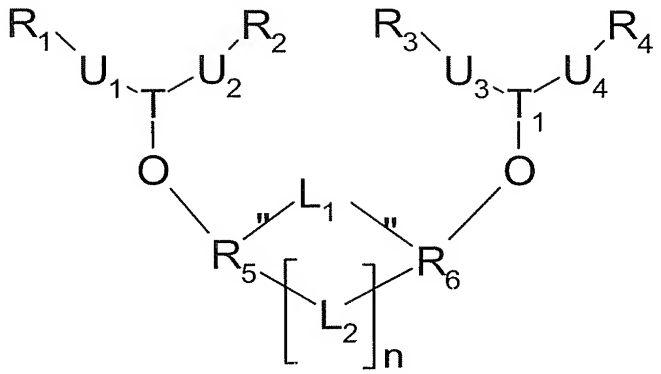
Lewis acid.

47-49. (Cancelled)

50. (Previously Presented) The process according to Claim 25, wherein the metallic element is selected from the group consisting of nickel in oxidation state (0), cobalt in oxidation state (I), ruthenium in oxidation state (II), rhodium in oxidation state (I), palladium in oxidation state (0), osmium in oxidation state (II), iridium in oxidation state (I), AND platinum in oxidation state (0).

51. (Previously Presented) The process according to Claim 25, wherein the metallic element is selected from the group consisting of nickel, cobalt, iron, palladium and copper.

52. (Currently Amended) ~~The~~ A process ~~according to Claim 25,~~ for hydrocyanating a hydrocarbon compound containing at least one ethylenic unsaturation by reacting said hydrocarbon in a liquid medium with hydrogen cyanide in the presence of a catalyst comprising a metallic element and an organic ligand, wherein the metallic element is nickel, and
the organic ligand corresponds to formula I below:



(I)

in which:

T and T_1 represent a phosphorus atom,

R_1, R_2, R_3 and R_4, which are identical or different, represent a substituted or unsubstituted aryl radical having one or more rings, which are in fused form or not, optionally having one or more heteroatoms,

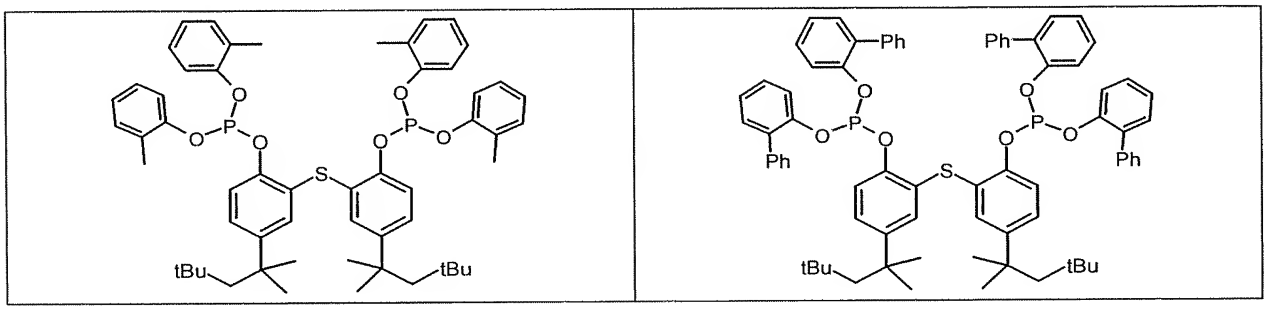
U_1, U_2, U_3 and U_4 represent an oxygen atom,

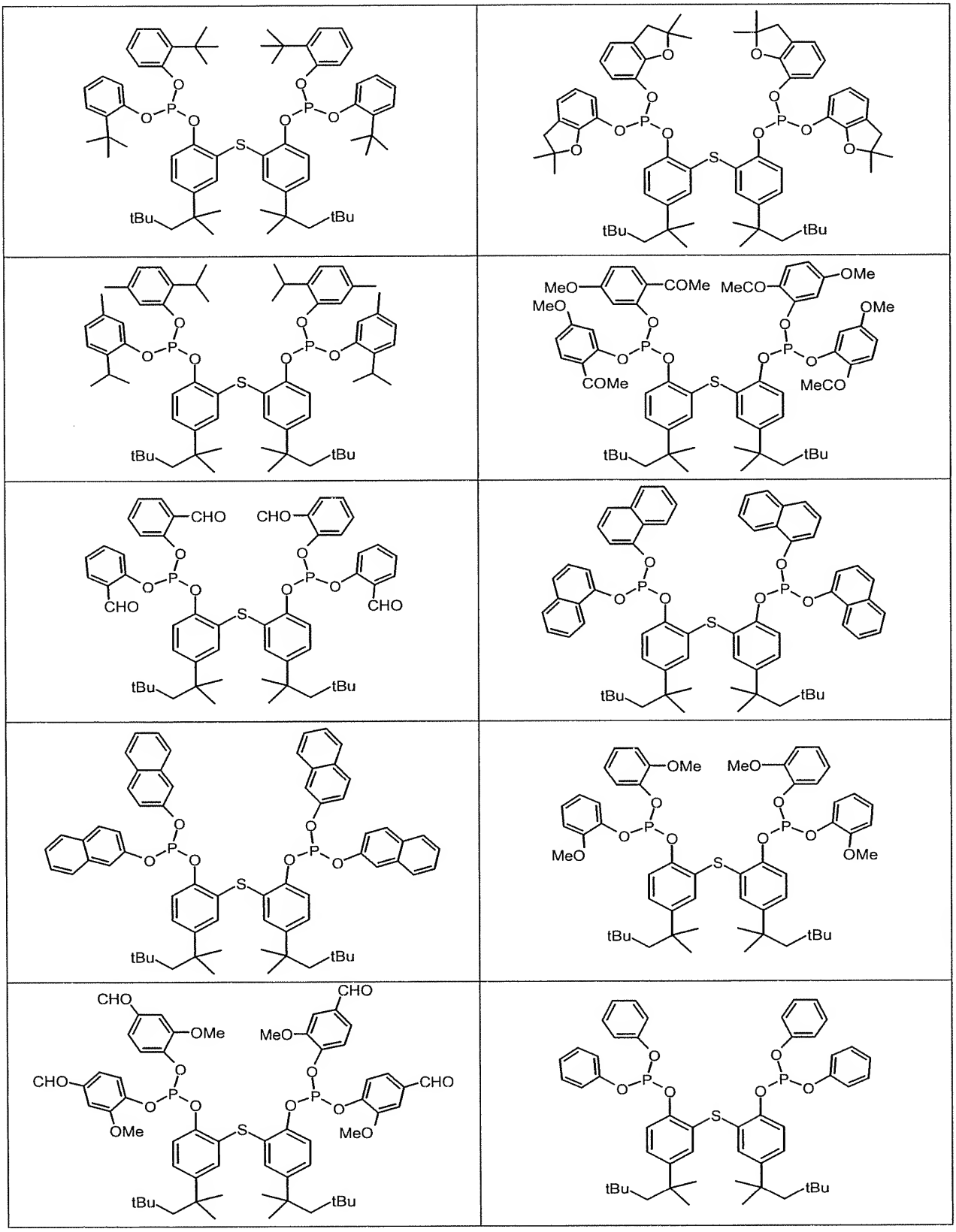
R_5 and R_6, which are identical or different, represent a substituted or unsubstituted aryl group,

n is 0, and

L_1 is S.

53. (Currently Amended) The process according to Claim 25, wherein the organic ligand of formula I is selected from the group consisting of:

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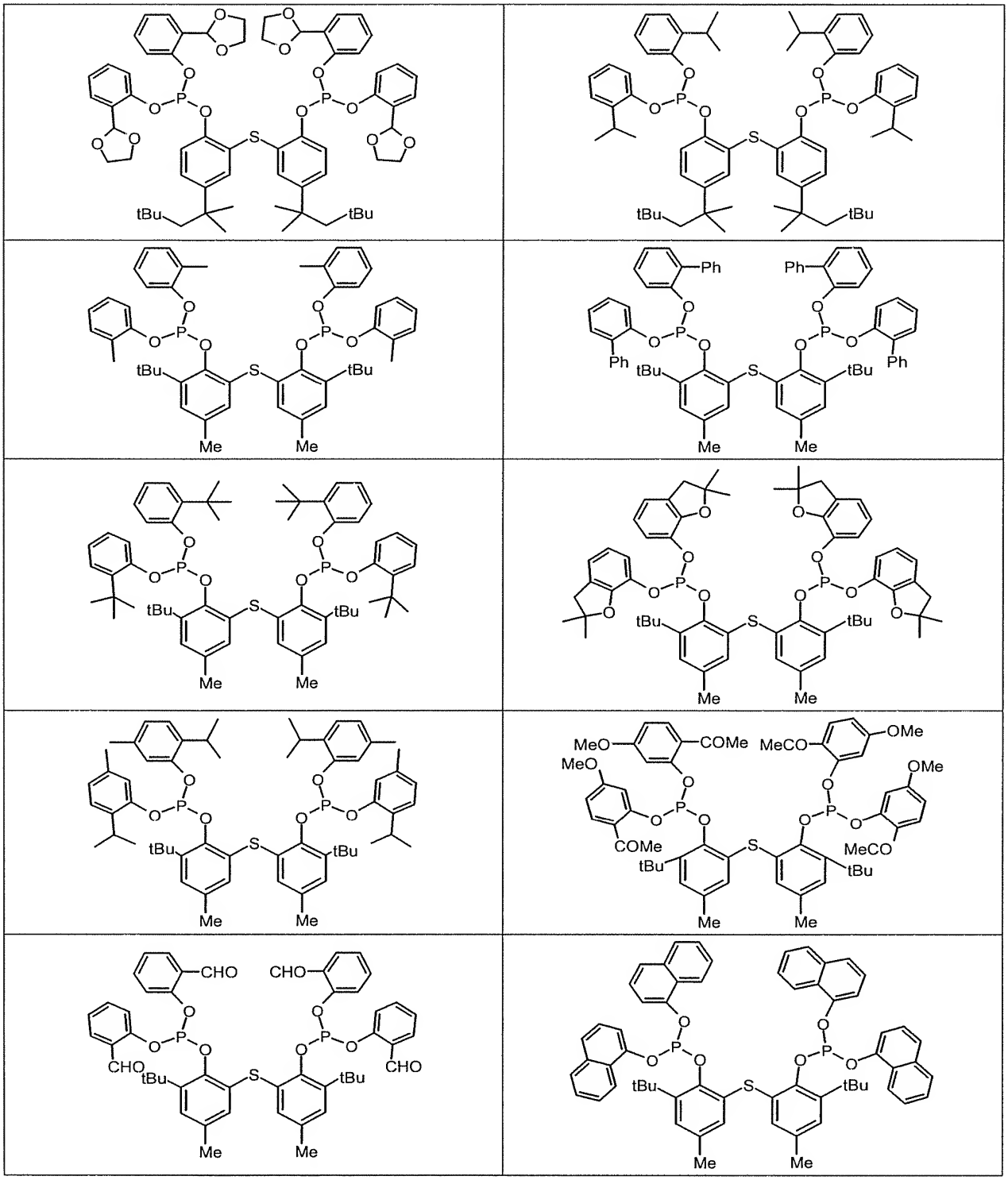
tBu
MeO
COMe
MeCO
OMe
CHO
OMe
MeO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Me
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Ph
Ph
MeO
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MeCO
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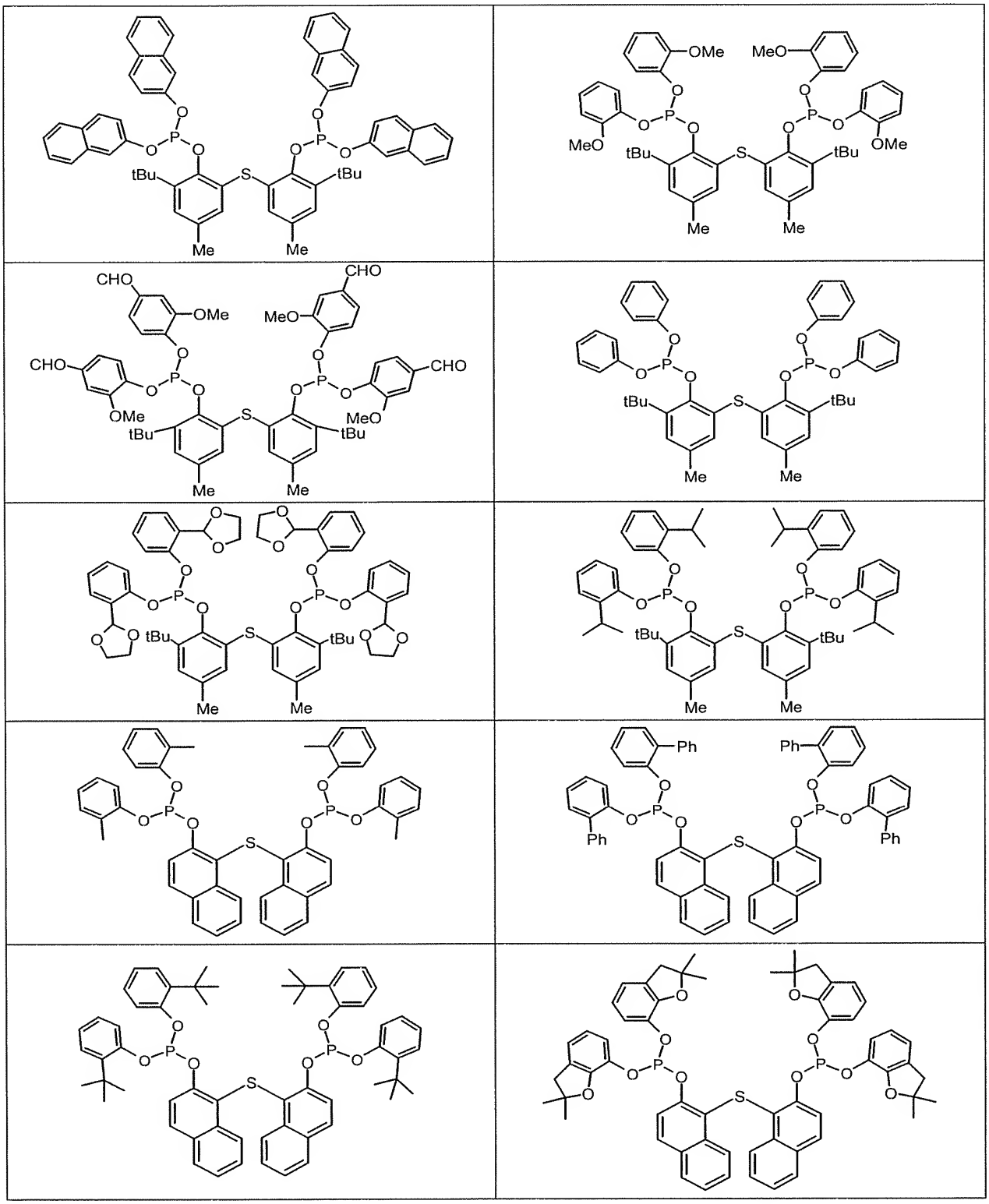
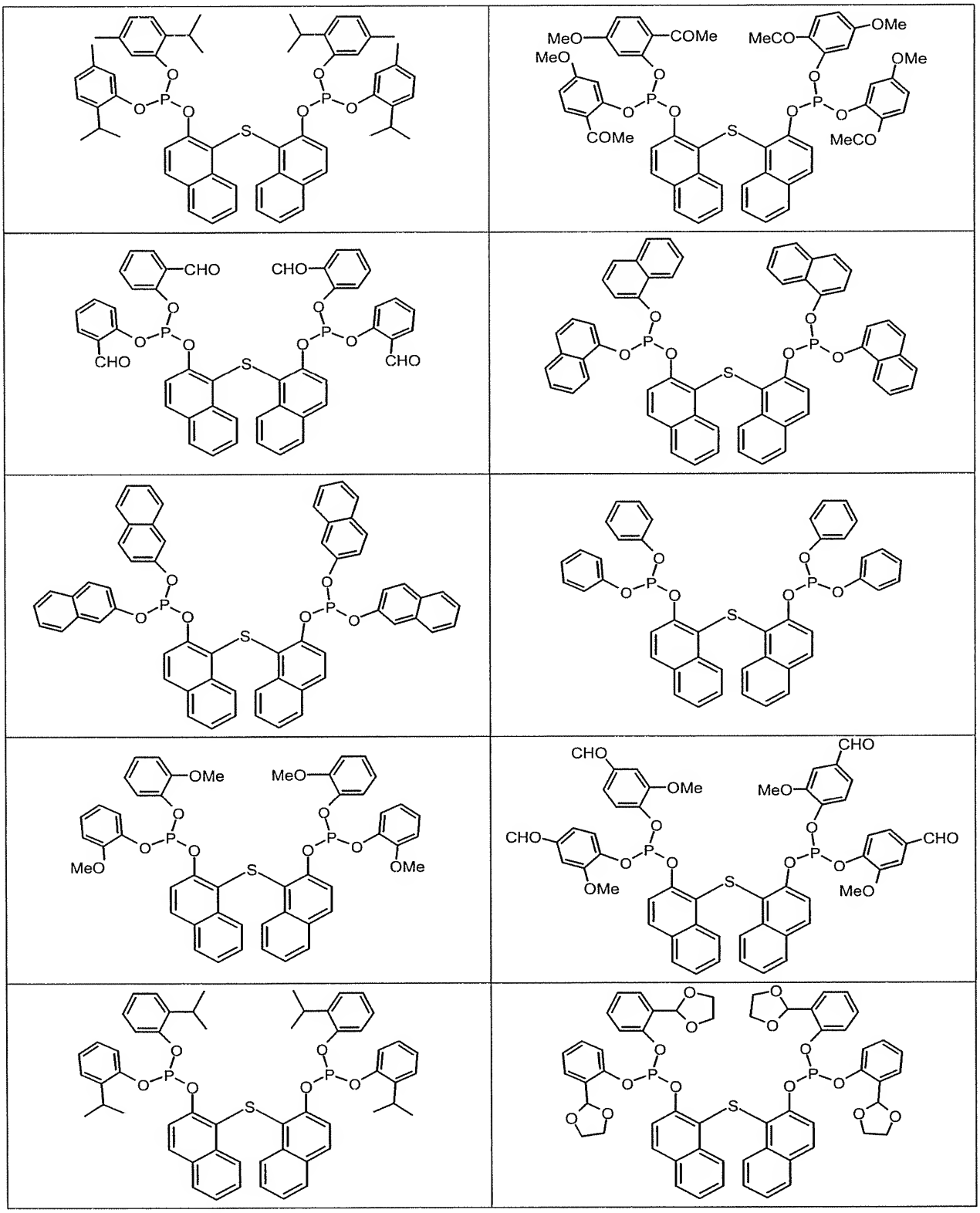
CHO


tBu
S
Me
OMe
MeO
CHO


MeO
COMe
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MeCO
OMe
OMe
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CHO
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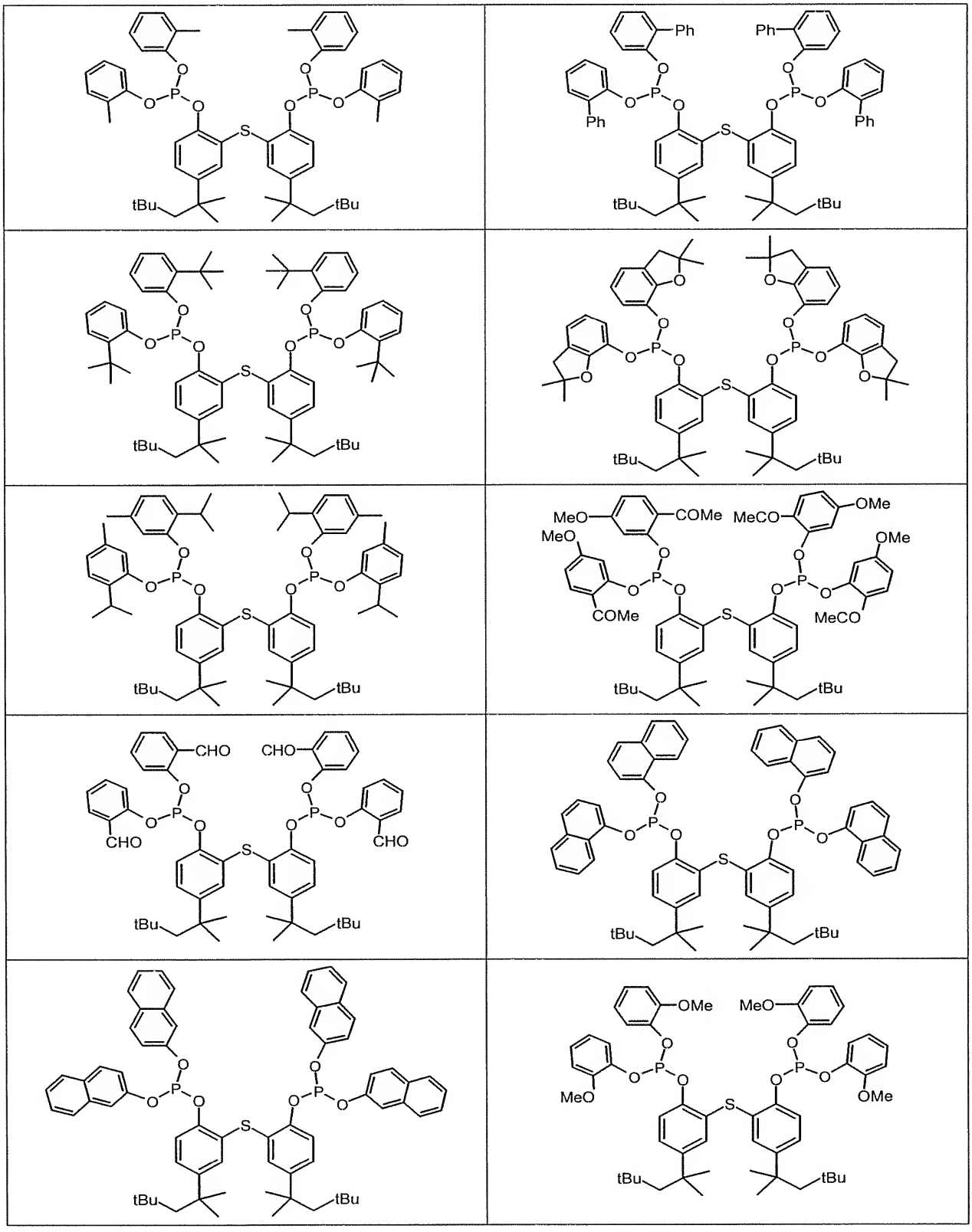
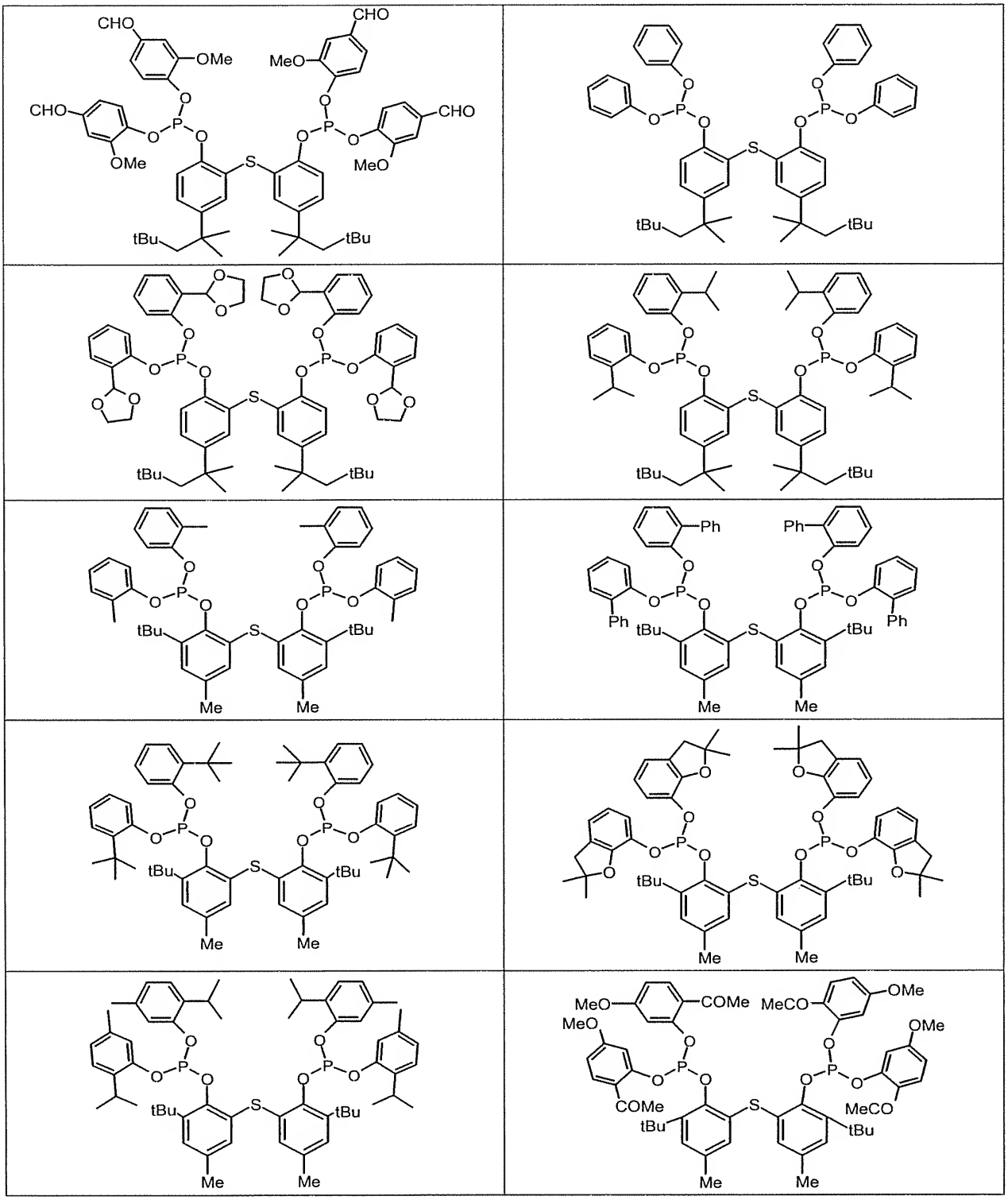
OMe
MeO

54. (Currently Amended) Compounds corresponding to the formulae below:




CHO
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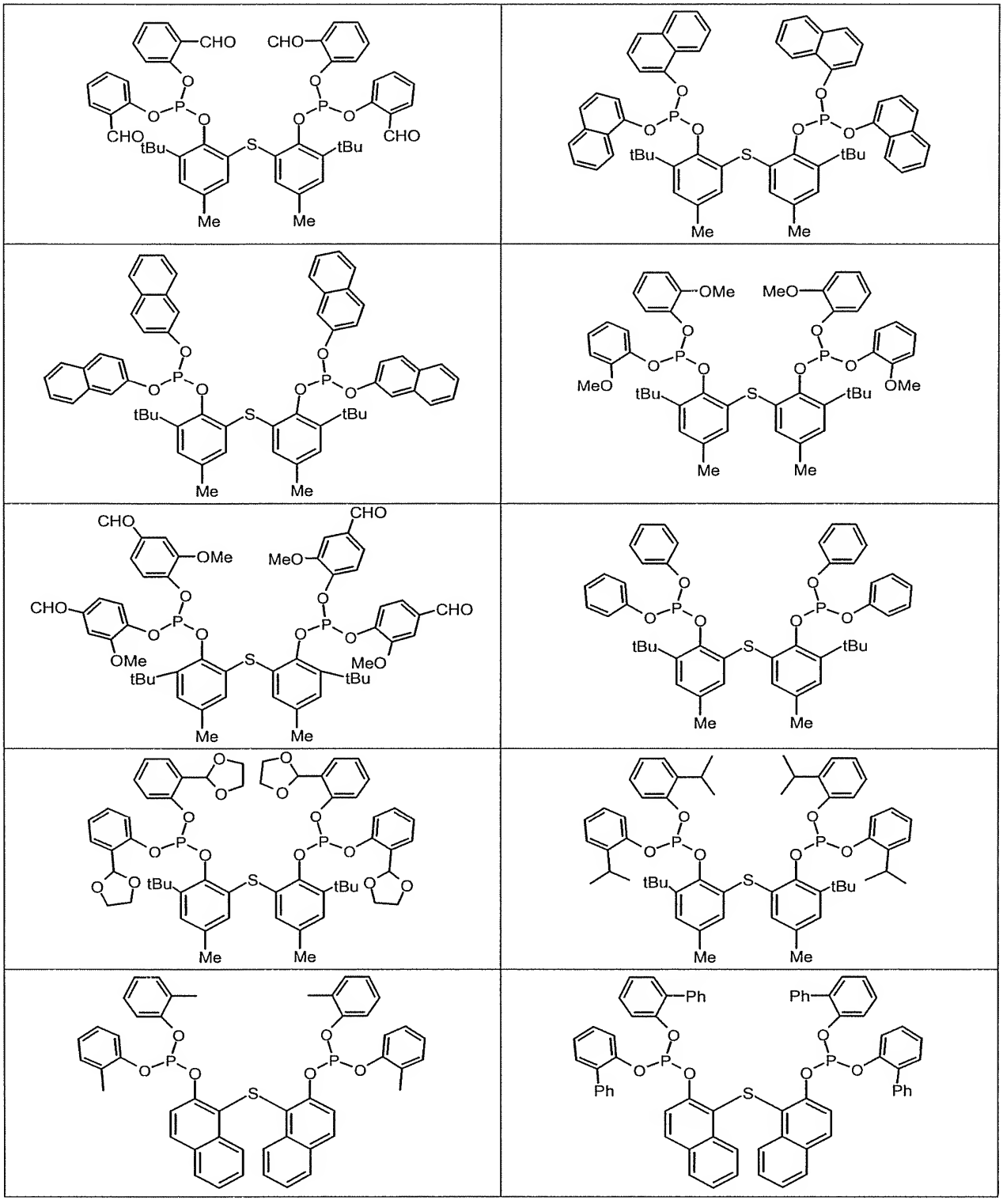
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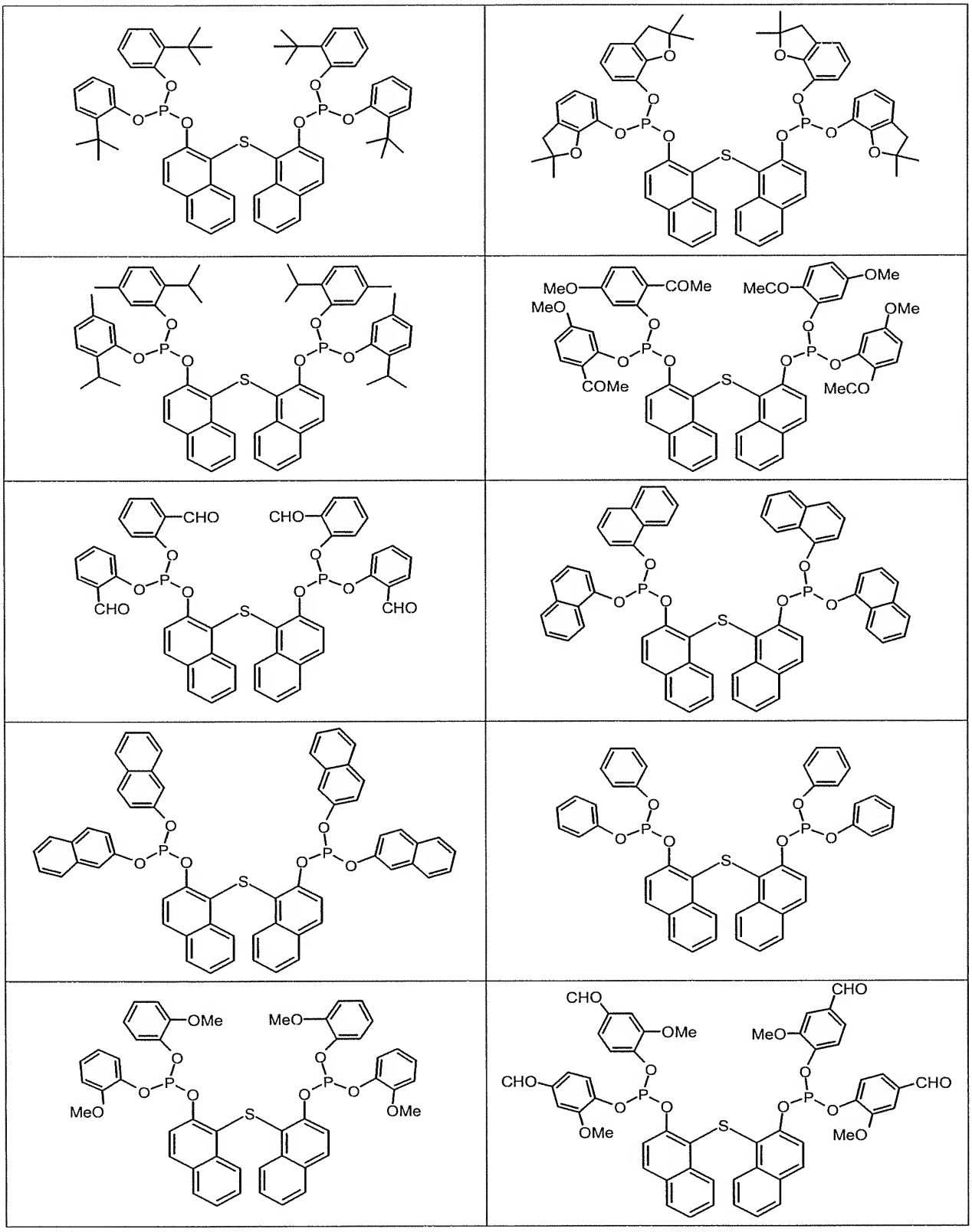
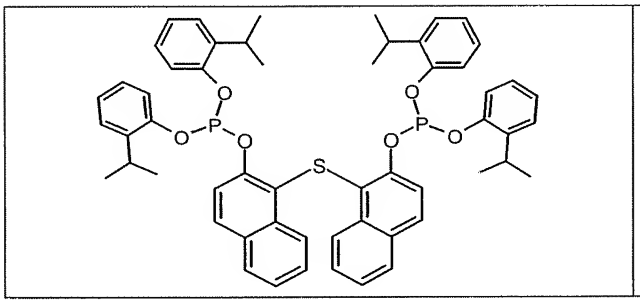
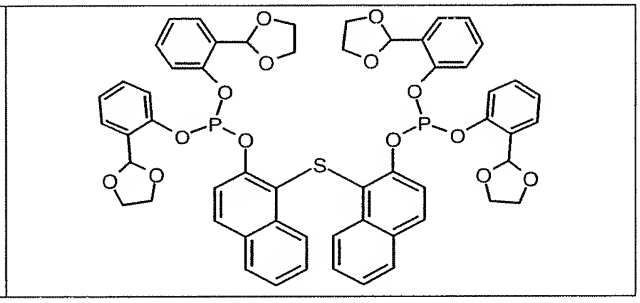

MeO
COMe
MeCO
OMe
CHO





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